July 3, 2013

William Murphy
Atkins
3901 Calverton Boulevard
Calverton, MD 20705

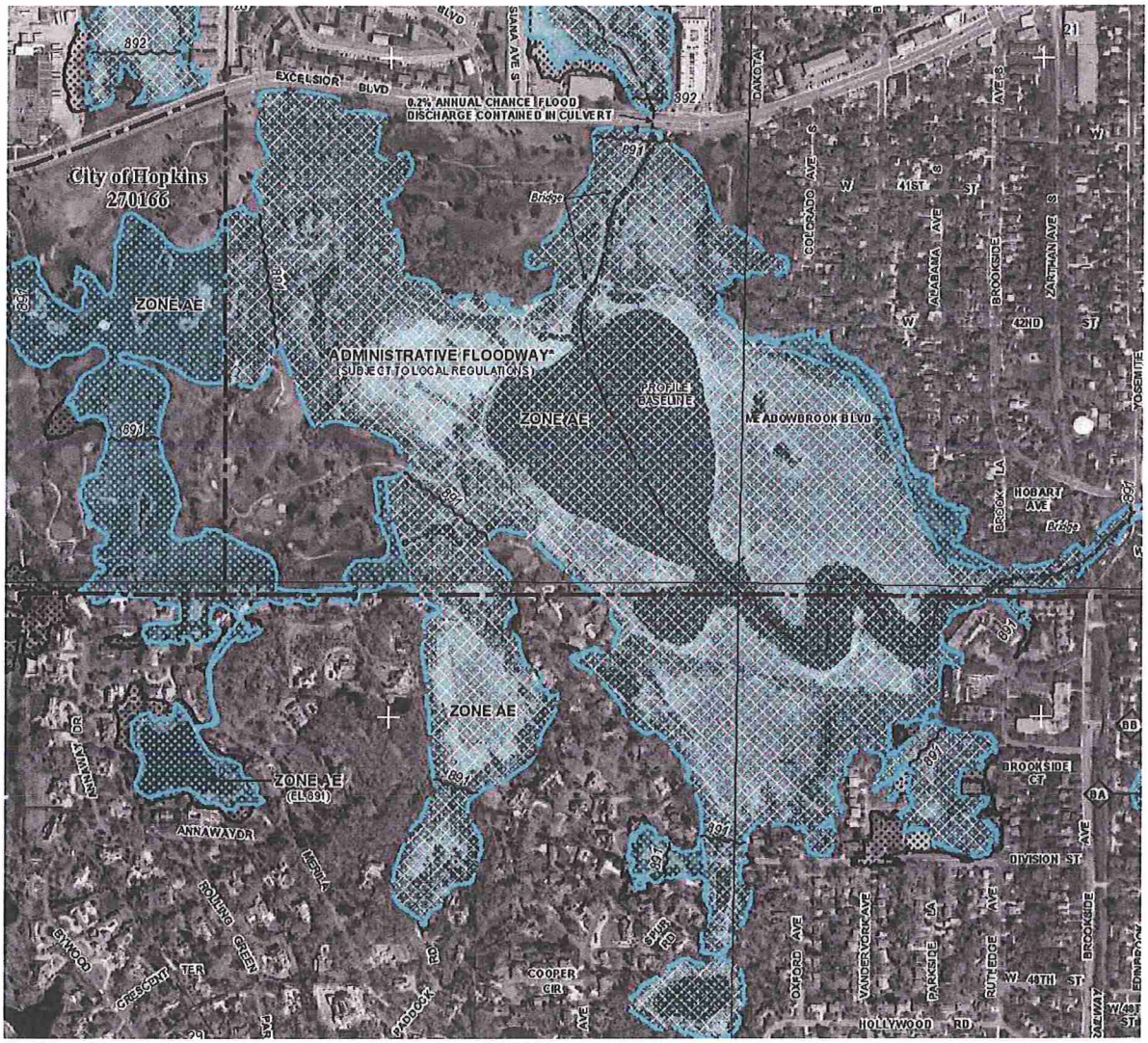
Re: Preliminary FEMA Map Appeal – Portion of Minnehaha Creek within the City of Edina, including the Rolling Green Area

Dear Mr. Murphy:

The effective and proposed base flood elevations published by the Federal Emergency Management Agency (FEMA) for portions of the City of Edina that drain to Minnehaha Creek have changed considerably in the last 10 years, especially the "Rolling Green" area located between Excelsior Boulevard and Brookside Avenue ("Rolling Green" area) that has fluctuated by a range of 3.5 feet.

The historic 100-year flood elevation for the Rolling Green area is 892 MSL, as identified in the effective Hennepin County Flood Insurance Study dated 2004. In 2005, the Minnehaha Creek Watershed District (MCWD) developed a hydrologic and hydraulic model of the watershed tributary to Minnehaha Creek, which predicted a lower flood elevation in the Rolling Green area (approximately 888.5 MSL). The results from this model were included in the preliminary Flood Insurance Rate Maps (FIRMs) issued by FEMA as part of the county-wide map updates. In 2006, several municipalities expressed concerns about the significant reductions in flood elevations along Minnehaha Creek, and the Minnesota Department of Natural Resources (MDNR) and FEMA agreed to work on resolving these concerns by modifying the hydrologic and hydraulic model that was used.

In 2007, Park Nicollet conducted a Letter of Map Revision (LOMR) which was necessary to accommodate expansion of their Methodist Hospital facility in the City of St. Louis Park adjacent to Minnehaha Creek. The modeling analysis for the LOMR used the Minnehaha Creek Watershed District (MCWD) hydrologic and hydraulic model as the base model with model modifications incorporated to more accurately model flows in the relevant portion of the creek and meet MDNR requirements. The outcome of the LOMR resulted in an increase in the 100-year flood elevation (889.5 MSL) in the Meadowbrook Golf Course (St. Louis Park) and Rolling Green neighborhood. Since the 2007 LOMR, the MDNR has worked with FEMA to improve the hydrologic and hydraulic model of Minnehaha Creek. FEMA's revised model ("FEMA model") indicates a base flood elevation of 891 MSL for the Rolling Green area, which is the base flood elevation shown on the preliminary FIRM (see inset figure below).



Rolling Green Area Preliminary Zone AE (panel 361F)

To better understand the variation in the 100-year flood elevation determinations over the past decade, the City's consulting engineer (Barr Engineering Company) evaluated the XP-SWMM models used to determine (and map) these elevations. A summary memorandum (dated July 3, 2013) of the evaluation is attached to this appeal letter. Barr Engineering Company's findings indicate that the proposed base flood elevation of 891 MSL in the Rolling Green area is technically incorrect due to mathematical errors in the computations completed by the XP-SWMM computer software Version 10.0, the version of the software used by FEMA to evaluate flood elevations on Minnehaha Creek.

The information provided in the attached memorandum is intended "to demonstrate that alternative methods or applications results in more correct estimates of base flood elevations, thus demonstrating that FEMA's estimates

are incorrect" (*Title 44, Chapter I, Part 67 of the Code of Federal Regulations, §67.6*). The memorandum identifies concerns with the accuracy of the Version 10.0 model due to mathematical error in storage volume calculations and overall high negative continuity error. Given these concerns, the City considers the results of the Version 10.0 model to be unreliable and technically incorrect. Therefore, the City is appealing the base flood elevation in the Rolling Green area as well as the other portions of Minnehaha Creek within the boundaries of the City of Edina based on the mathematical errors in the model computations.

The City proposes that the modeling used to determine the base flood elevations be further reviewed by FEMA due to the issues outlined in the attached memorandum. The City also proposes that the flood elevations be reanalyzed by FEMA using XP-SWMM Version 2012 based on the supporting documentation provided in the attached memorandum. The City is providing a XP-SWMM model run in Version 2012 along with this appeal. Because the negative continuity error of the Version 2012 model is significantly lower and because the mathematical error in storage volume calculations appears to have been corrected by XP-SWMM in Version 2012, the City considers the results of the Version 2012 model to be more reliable and more representative of the best available information on flood elevations on Minnehaha Creek. The City anticipates that floodplain elevations determined using XP-SWMM Version 2012 will change base flood elevations throughout several communities located within the Minnehaha Creek watershed.

All supporting documentation for this appeal is available for download from the following FTP site:

- In Windows Explorer ("My Computer", not the web browser Internet Explorer) type: ftp://user.barr.com
- Press Enter
- Username: sms
- Password: ftpsms
- The documentation can be found under the folder "Edina-FEMA-Appeal" and then the subfolder "Rolling Green"

The City of Edina and its residents are very concerned about the preliminary revised base flood elevations given the mathematical errors and technical inaccuracies of the modeling. The City's goal is to provide the best available data to our residents to accurately identify flood risk, and at this time, the City does not feel confident that the preliminary flood risk information provides the appropriate level of accuracy, nor does it represent the best available information on flood elevations on Minnehaha Creek.

Thank you for your consideration of this appeal. The City of Edina, as well as Barr Engineering Company, welcome the opportunity to discuss any questions and/or concerns FEMA may have regarding this appeal and/or the supporting documentation that has been provided to support further review of the Minnehaha Creek base flood

elevations and associated FIRMs. The City recognizes that FEMA would like to finalize the Hennepin County maps as soon as possible; therefore, the City would appreciate notification of FEMA's decisions regarding this appeal as soon as the decision is made (prior to the Letter of Final Determination) so that the City can be prepared to explain FEMA's decisions to residents and/or move forward with invoking our right to an appeal to District Court, as deemed necessary, without unnecessary additional delay.

Sincerely,

Scott Neal
City Manager, City of Edina

c: Wayne Houle, City Engineer, City of Edina
Janna Kieffer, Barr Engineering Company
Suzanne Jiwani, Minnesota Department of Natural Resources
Eric Evenson, District Administrator, Minnehaha Creek Watershed District